re-stoppered, they were still liable to the unexpected evaporation and leakage already described. Hence, without any manner of doubt, the shortage which struck the southern party so hard.

That the oil could have soaked the supplies placed seven feet below the oil tins by escaping through the stopper in the form of vapor, seems impossible. A possible and very plausible explanation of this leakage of oil is the conversion of ordinary tin into the allotropic form, gray tin powder. This change to gray tin powder is known to take place at a maximum rate at —48° C. and may take place more slowly at other temperatures below 18° C. Should this change occur along the soldered seams of the container, the mysterious leakage of oil might well be explained. This peculiar disintegration of tin is also shown by certain alloys of tin. Articles of pewter (tin 4 parts, lead one part) have frequently been known to show such changes and this change has indeed been given the name "museum disease," referring to pewter articles. Farup[2] claims that the admixture of other metals influences the rate at which said change occurs and in the series zinc, cadmium, copper, silver, lead, the accelerating influence increases in the order given, lead having the greatest accelerating effect. Since hard solder may contain 65 per cent. tin and since pewter is known to show this property, it may also be expected in such a hard solder. If such is the case, it is a good indication of the extreme care which must be exercised to meet the severe and unusual conditions surrounding polar exploration.

B. T. BROOKS
MELLON INSTITUTE OF INDUSTRIAL RESEARCH,
UNIVERSITY OF PITTSBURGH

2 *Cf.* "Handbuch d. Anorganische Chemie," Abegg, III_2, pp. 550.

CUBIST SCIENCE

THOSE stanch defenders of the citadel of pure science, who have so long arrayed themselves against the insidious invasion of metaphysics, must now arm themselves to repel a new foe. This is nothing less than that *dernier cri* of esthetic literature—cubism! Those who have come in contact with the cubist literature of Gertrude Stein or her disciples and imitators will recognize at once the diagnostic symptoms of infection in an article by P. C. van der Wolk in one of the most sober journals of genetics.[1] This paper is entitled "New Researches into Some Statistics of *Coffea*." Note the apparent innocence of the title. Here are some excerpts:

> In both of the former communications we saw how that generally the different curves, *within* the definite end curve, are present in a greater or smaller number of removings; the tops of the different curves remove in all directions, whereby the crucial point is still that the place of those tops is not so arbitrary. . . . I thought in the beginning to have an instance in which all the curves exhibited precisely the same top as was the case with the first four curves. Suddenly however halfway up the tree, the top thrust out a large distance to the right side, and to my astonishment the consequent curves as well as the definite end curve exhibited exactly the same top as curve 5. It is noteworthy that this top-removing happened *suddenly, without transition*. . . . Let us now refer back to both of the previous investigations. We then once more observe all those analyzed curves. Is there then a difference in principle between this newly recorded case and all the others? Is there a difference in principle in the question whether it is *only once* that a top-removing of the curves occurs within the end curve (as in our present case) or that *several times* top-removing takes place (as is the case in the two previous communications). Certainly not. [Italics are the author's.]

The scientific world will await with renewed interest this author's fourth communication, which we understand is to be a statistical study of top-removing in *Cannabis indica*.

J. F. A.

1 *Zeitschrift für Induktive Abstammungs- und Vererbungslehre*, 1914, XI., p. 355 ff.

MOTIONS OF ATMOSPHERE

TO THE EDITOR OF SCIENCE: Recent letters from mathematicians and physicists seem to show that there are very few students or professors in our universities who pay much attention to the difficult problems that refer to motions of the atmosphere on a large scale. But surely there must be some physicists who

are giving atmospherics close attention, even though the problems do seem too difficult for them to handle, either in printed memoirs or in lectures before their classes. I beg to utilize the columns of SCIENCE in an effort to ascertain the existence of such scholars and to solicit their cooperation with me in an endeavor to stimulate the study of the motions of the atmosphere.

The U. S. daily weather map of the northern hemisphere and *The Monthly Weather Review* will undoubtedly be useful to all earnest students.

CLEVELAND ABBE

SCIENTIFIC BOOKS

The Fungi which Cause Plant Disease. By F. L. STEVENS, Ph.D. New York, The Macmilan Co. 1913. Pp. 754. Figs. 449. Price $4.00.

Eighteen years ago the classic work on "Pilzpärasitaren Krankheiten der Pflanzen," by Frank, made its appearance, while the "Diseases of Plants Induced by Cryptogamic Parasites," by von Tubeuf and Smith, was published a year later. Despite the fact that a number of efforts have been made within the last few years by American writers, pathologists in general have been still looking for a new work that would satisfactorily supplant these older volumes. Stevens has entered the field with another volume which is intended to supplement his earlier and less technical work on "Diseases of Economic Plants." In the words of the author, "effort has been made to avoid duplication of matter contained in that volume." It is to be regretted that but little of the mycological and pathological activities of the past three years will be found in this new work (1911 in part only). This is to be deplored, since plant pathology has been passing through a period of rapid progress. It will perhaps be only fair, however, to overlook this shortcoming in passing judgment on the work in question. To what extent these two volumes will meet the expectations and needs of American students time alone will reveal. Perhaps we are expecting too much, but our mind has pictured the old classics as but stepping stones to the desired goal.

This new volume includes keys to the orders, families and genera of Myxomycetes, Schizomycetes and Eumycetes containing parasitic species. According to the author's statement, "Nonparasitic groups closely related to those that are parasitic have been introduced in the keys merely to give a larger perspective to the student." Directing our attention to the Ascomycetes, we may note that the keys are in the main translations from "Die natürlichen Pflanzenfamilien," with omissions and abbreviations, and occasionally the introduction of new genera. Parallel choices are indicated by marginal indentation, the characters employed in the original being omitted. Turning to the Fungi Imperfecti, we find that after the key to the hyaline-spored Sphæroidaceæ which follows Engler and Prantl quite closely, the keys appear for the most part to be transcriptions from Clements's "Genera of Fungi" with only slight modifications. The student who can steer his way through the key to the hyaline-spored Sphæroidaceæ without becoming lost in a bewildering tangle of spores, pycnidia and stromata, would deserve early election to Sigma Xi.

It is not possible to enter into a detailed discussion of the keys, but it seems that the author has relied too much on keys published some years ago, so that they are not always in harmony with our present knowledge. For example, "Conidia not in pycnidia, dark brown" is used as the key character for *Melanconis* (p. 279), although it is now known that certain species produce pycnidal (*Fusicoccum*) and acervular (*Coryneum*) stages.

According to the keys the vegetative body of the Schizomycetes is a "single-walled cell" (p. 3); *Nœmospora* is placed under the division with muticate conidia (p. 538), probably correctly, but the text description says "with a bristle at each end." This genus is given under both the Hyalosporæ and the Scolecosporæ (pp. 538 and 562).

The experienced mycologist makes little use of keys, but when he does care to use them he will certainly go to the original. The prin-